# DET2/2
# Auto Earth Tester




- **High resolution – 1 mΩ – ideal for large earthing systems**
- **High accuracy for earth electrode and soil resistivity testing**
- **Test voltage 50 V max. for safety**
- **Rechargeable battery power with long battery life and rapid re-charge**
- **A robust, versatile instrument with IP54 protection**
- **Filter and high current features to enable valid earth testing in difficult situations**

## DESCRIPTION

The Megger® DET2/2 Auto Earth Tester is a robust compact instrument designed for measuring earth electrode resistance and soil resistivity. It uses the four terminal method of measurement which eliminates the resistance of the current circuit from the measurement. The circuit design ensures that the resistance of the potential circuit does not affect the measurement during practical testing.

The instrument is microprocessor controlled and provides a flexible, 'user-friendly' approach to earth testing by giving good error detection capabilities and full test information on a large easily readable alpha-numeric display. A simple key pad can be used to adjust the test frequency, the test current level and the filtering so that adverse conditions influencing the test may be overcome. The display indicates if:-

- the noise interference in the soil passing the test current is excessive.
- the current test spike resistance is too high.
- the potential test spike resistance is too high.
- the battery needs recharging.

Because these factors are indicated directly the whole testing procedure is accomplished easily and more rapidly.

A wide band of test current frequencies, with a resolution of 0,5 Hz, may be used to eliminate errors caused by noise in the earth. The chosen test current frequency, test current level and the increased filtering option are stored in memory for use in subsequent tests.

The display can be set to show its information in the following languages:- English, French, German, Portuguese and Spanish.

The maximum output voltage is limited to 50 V for safety when performing a test and convenience when re-positioning test spikes. The instrument is auto-ranging relieving the operator of any concern as to which resistance range to use. The low service error and an IP 54 environmental specification enable accurate results to be obtained in 'unfriendly' testing conditions.

Power for the instrument is supplied from a rechargeable lead acid battery which gives 5 hours of life per charge, equivalent to six hundred individual tests lasting 30 seconds each.

The DET2/2 is built into a robust plastic case and has its four terminals, equipped for spade or 4 mm connectors, mounted on the front panel.

## APPLICATIONS

The DET2/2 Earth Tester is a reliable instrument designed for larger or more complex earthing systems, including communications earthing systems and difficult testing environments. It may be used to test in accordance with BS 7430 (1991), the IEE Wiring Regulations and VDE 0413 part 7 (1982). The instrument is suitable for soil resistivity measurements, which are used to establish the optimum electrode design and site, as well as perform archeological and geological investigations.

Resistivity tests assist in the design of a correct earth system and avoid the cost of re-working electrode installations.

Earth testing kits, which include suitable test spikes and test leads, are available separately.

## specifications

**Earth Resistance Range**
0,010 Ω to 19,99 kΩ (auto-ranging), 1 mΩ resolution.

**Accuracy (23°C ±2°C)**
±0,5% of reading ±2 digits

**Service Error**
±5% of reading ±2 digits ±10 mΩ (meets VDE service error over 50 mΩ)

**Comply with Standards**

BS 7430 (1991)

VDE 0413 Part 7 (1982)

**Test Frequency**
105 to 160 Hz reversing d.c. (50 Hz operation default to 128 Hz, 60 Hz operation default to 150 Hz) Set in steps of 0,5 Hz

**Test Current**
50 mA max (selectable high and low levels)

**Maximum Output Voltage**
< 50 V r.m.s.

**Maximum Interference**
Typically 40 V peak-to-peak (50/60 Hz, sinusoidal nature)

**Display**
Alphanumeric L.C.D. (130 x 35 mm) giving test information and a large (20 mm) 3½-digit reading)

**Temperature Coefficient**
< ±0.1% per °C over the temperature range -10 to +40°C
0,05% per °F from 14 to 104°F

**Temperature Range**
**Operating:** -10 to +40°C (14 to 104°F)
**Storage:** -20 to +60°C (-4 to +140°F)

**Humidity**
**Operating:** 90% RH max. at 40°C (104°F)

**Environmental Protection**
The instrument is waterproof to IP54

**Flash Test:** 3 kV a.c.

**Voltage Withstand**
In the event of a system fault, the instrument will withstand 240 V a.c. applied between any two terminals.

**Power Supply**
**Internal**
Rechargeable, sealed lead-acid battery.
12 V (nominal), 2,6-Ah capacity.
Battery voltage over which basic accuracy is maintained is 11,0 to 13,5 V.

**Battery life:** Approximately 5 hrs. continuous use.

**Battery charging time:** 6 hrs. max. (from completely exhausted), charging current automatically controlled to stop over-charging.

Charging supply required: 100 to 130 V or 200 to 260 V, 50/60 Hz.

**Power consumption:** 9 W max. at 12 V.

**Safety**
The instruments meet the requirements of IEC61010-1.

**EMC**
In accordance with IEC 61326 -1.

**Dimensions:** 245 H x 344 W x 158 D mm (9,6 H x 13,5 W x 6,25 D in. approx.)

**Weight:** 5 kg (11 lb approx.)

**Maximum Current Spike (Loop) Resistance**

| High Range | Low Current | Current |
|---|---|---|
| (RE ) | (RC ) | (RC ) |
| 0,010 to 0,499 Ω | 5 kΩ | 1 kΩ |
| 0,500 to 1,999 Ω | 5 kΩ | 3 kΩ |
| 2,000 to 19,99 Ω | 10 kΩ | 5 kΩ |
| (over 20 Ω RC > 20 kΩ) | | |

**Maximum Potential Spike (Loop) Resistance**

| High Range | Low Current | Current |
|---|---|---|
| (RE ) | (RP ) | (RP ) |
| 0,010 to 0,499 Ω | 11 kΩ | 11 kΩ |
| 0,500 to 1,999 Ω | 21 kΩ | 11 kΩ |
| 2,000 to 19,99 Ω | 21 kΩ | 11 kΩ |
| (over 20 Ω RP > 20 kΩ) | | |

## ORDERING INFORMATION

| Item (Qty) | OrderCode. |
|---|---|
| Auto Earth Tester | DET2/2 |
| Included Accessories | |
| Mains supply lead for battery charging | |
| Operating instruction book | 6171-728 |
| Optional Accessories | |
| Earth testing kit | 6310-755 |
| Comprising carrying case and pouch containing: | |
| Four galvanised steel spikes ('L' shape) 10 mm dia. (0.4 in. dia. approx) x 350 mm (14 in. approx) long | |
| 30 m (98,5 ft approx) of cable on a winder | |
| 50 m (164 ft approx) of cable on a winder | |
| Two 3 m leads complete with connectors and clips | |
| Hammer | |
| Reel of cable, 50 m [164 ft. approx] | 6121-119 |

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Registered to ISO 14001 Reg no. EMS 61597
**DET2_2_DS_en_V12**

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